Fig. 1

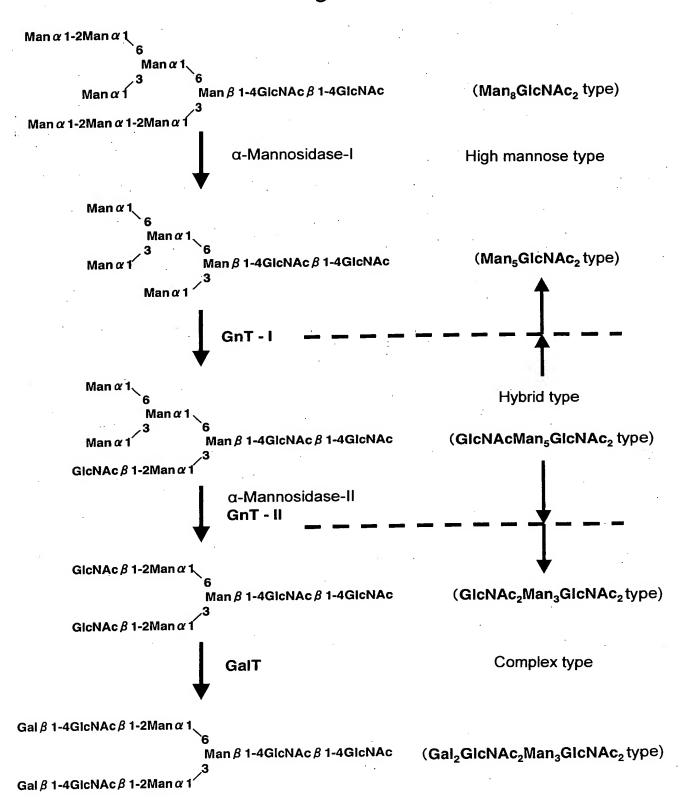
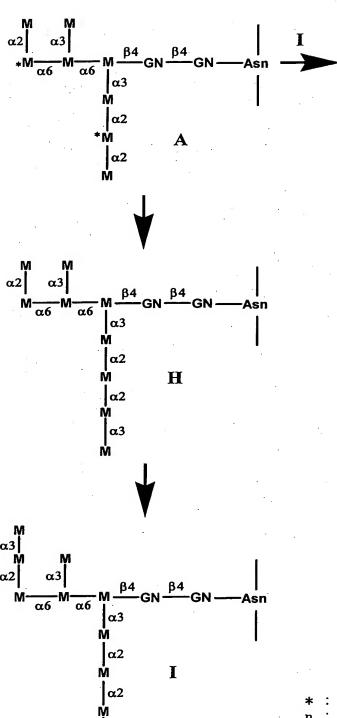


Fig. 2

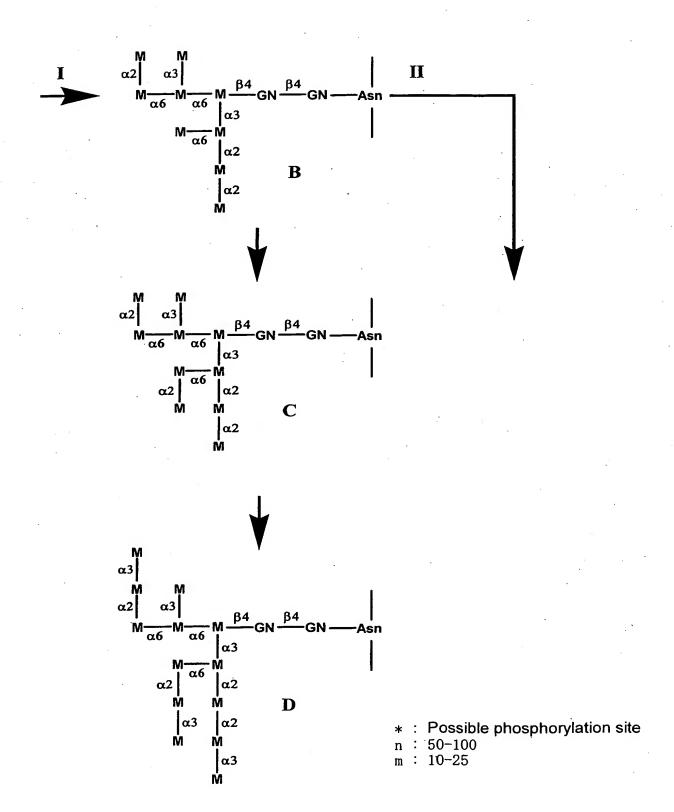


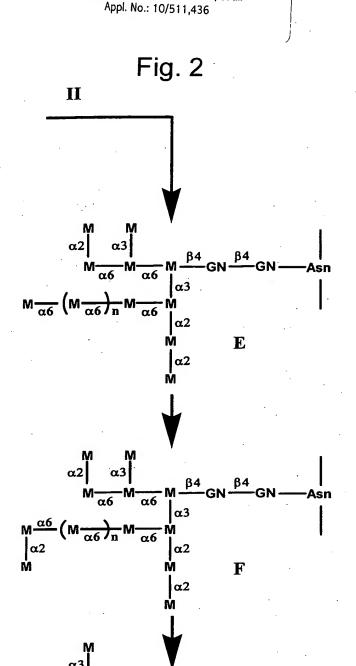
* : Possible phosphorylation site

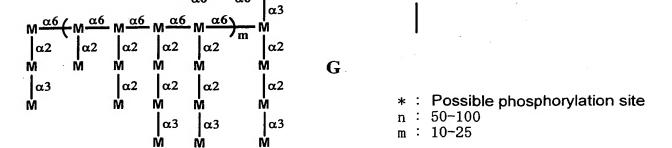
n: 50-100 m: 10-25

α3

Fig. 2





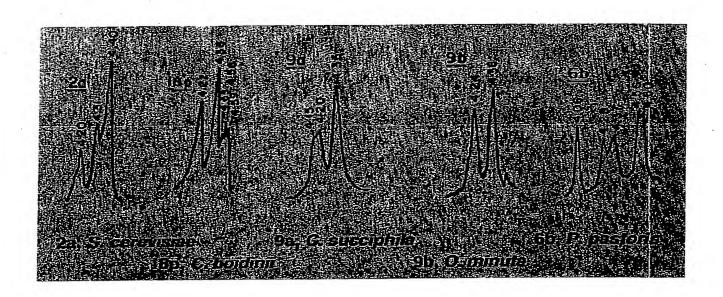


α3

Title: METHYLOTROPH PRODUCING MAMMALIAN
TYPE SUGAR CHAIN
Inventor(s): Kazun KORAYASHI, et al.

Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436 10/511436

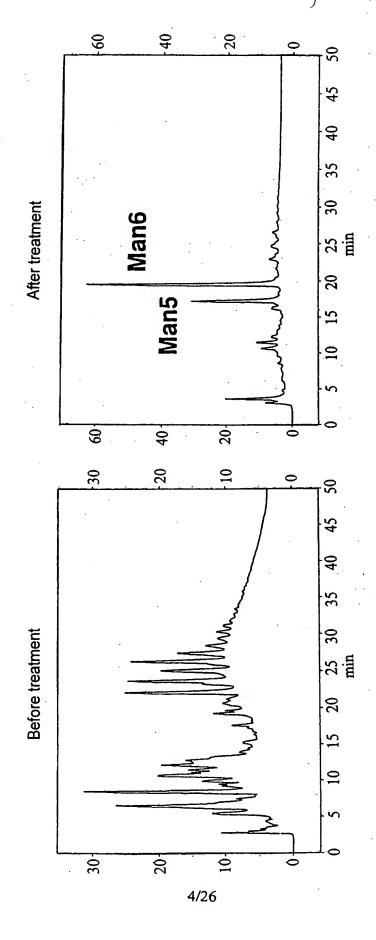
Fig. 3



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Ogataea minuta

Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436



α-1,2-Mannosidase

Fig. 4

Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

120 100 50 80 9 40 45 30 After treatment Man6 25 min 20. 120 20 100 80 9 40 .20 30 .10 Before treatment 30 25 min 20, 10 20 30 4/1/26

Candida succiphila

Fig. 4

a-1,2-Mannosidase

Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

After treatment min .08 Before treatment min 4/2/26

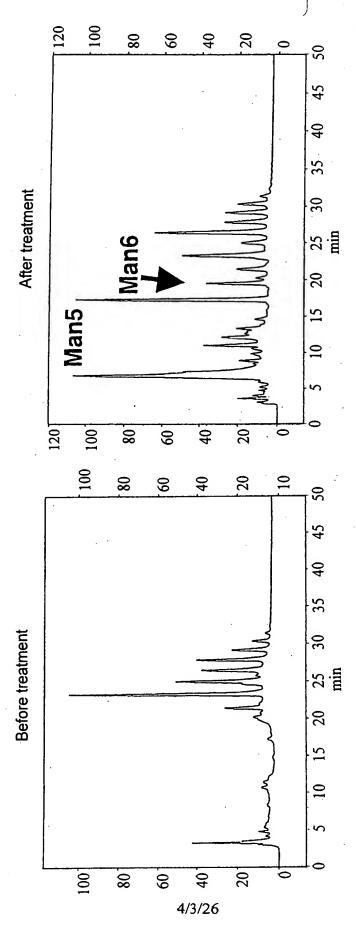
α-1,2-Mannosidase

Fig. 4

Candida boidinii

10/511436

Saccharomyces cerevisiae



α-1,2-Mannosidase

Fig. 4

Fig. 5

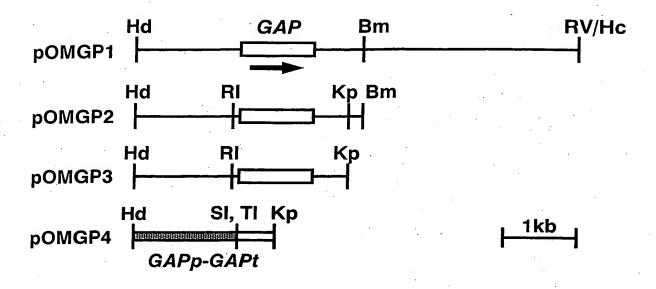
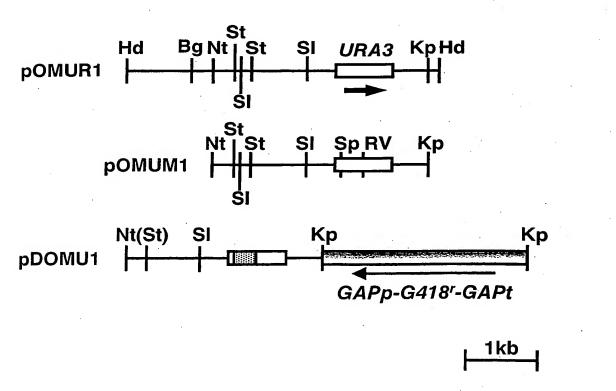


Fig. 6



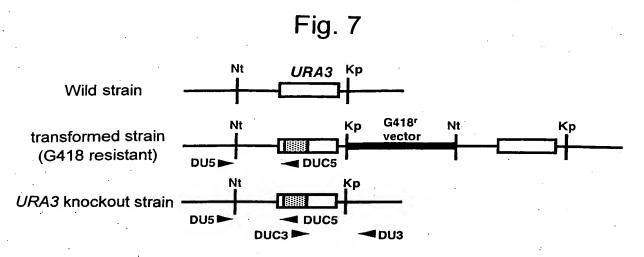


Fig. 8

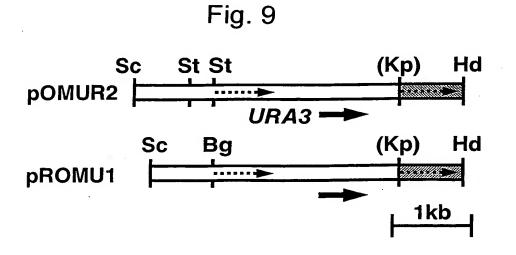
Hd RV ADE1 Bg Sm Bm

pOMAD1 Hd Bm/Bg

Nt Ap

URA3

pDOMAD1



Appl. No.: 10/511,436

Fig. 10

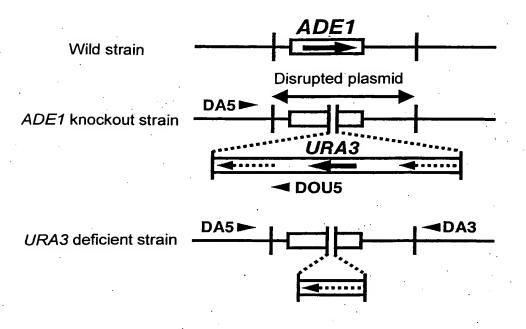


Fig. 11

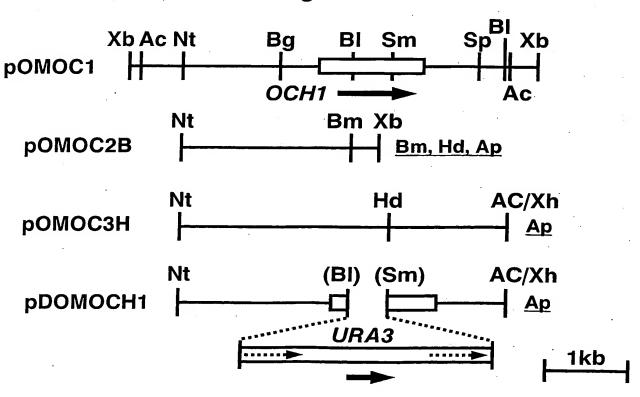
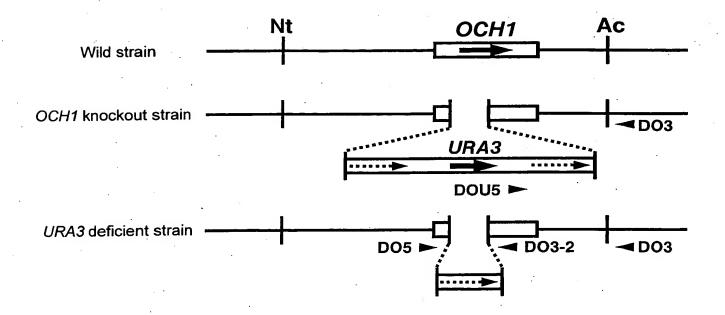
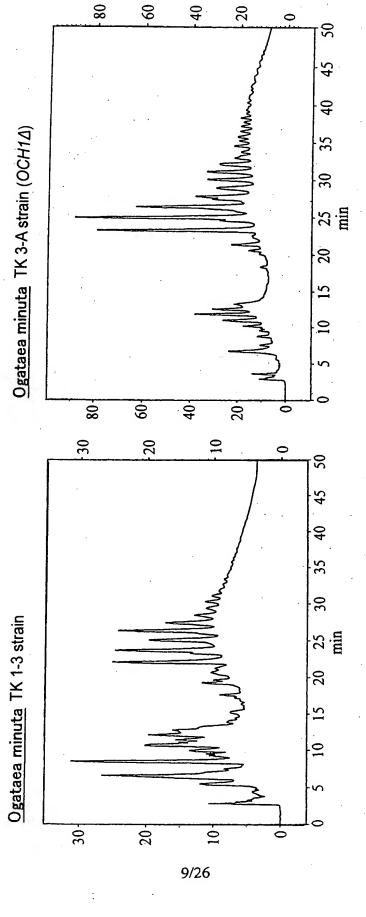


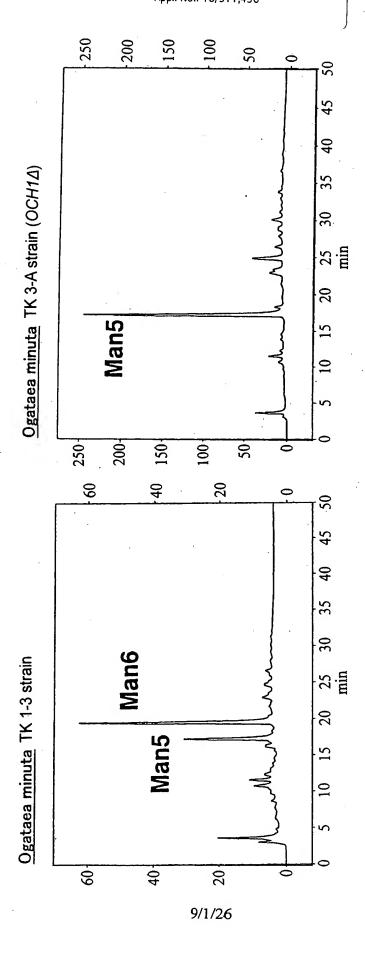
Fig. 12





Amide column before digested with α -1,2-mannosidase

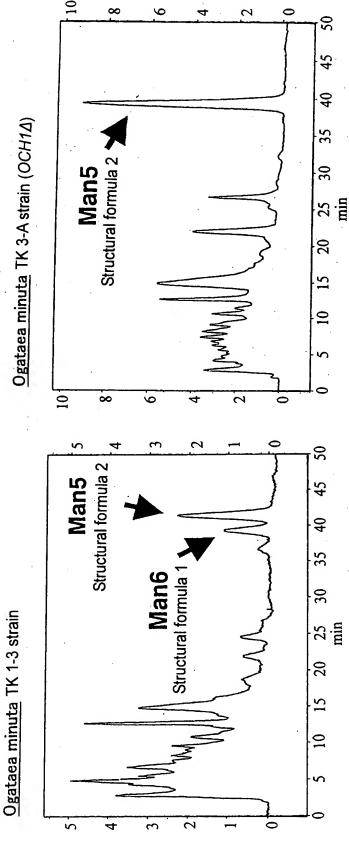
Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436



Amide column after digested with α -1,2-mannosidase

⁼ig. 1;

Ogataea minuta TK 3-A strain (OCH1A)



Reverse phase column

Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN

Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

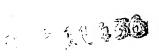


Fig. 14

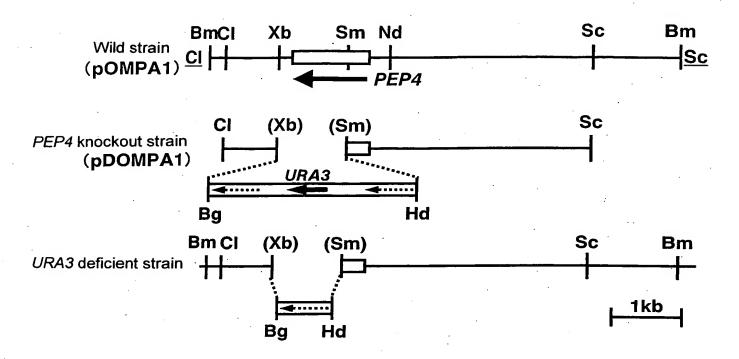


Fig. 15

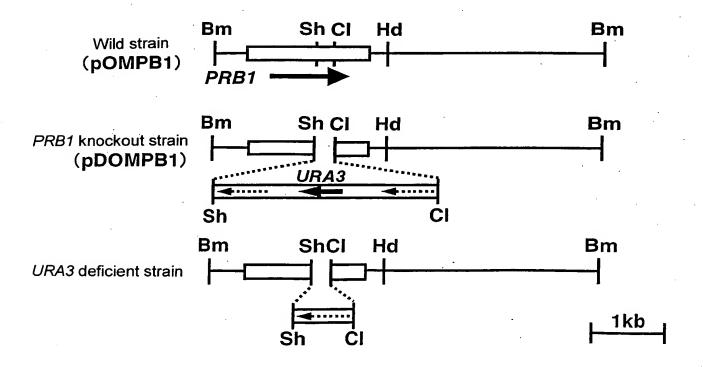


Fig. 16

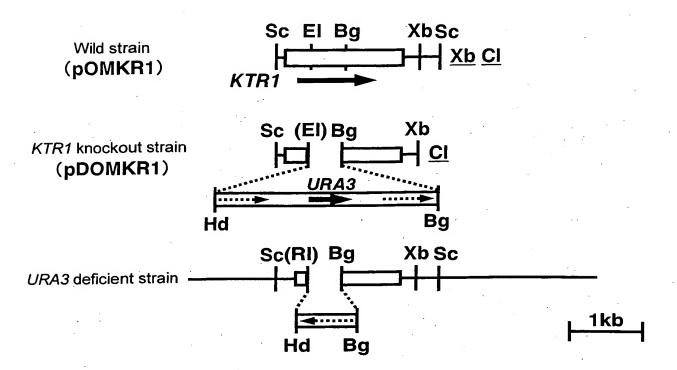


Fig. 17

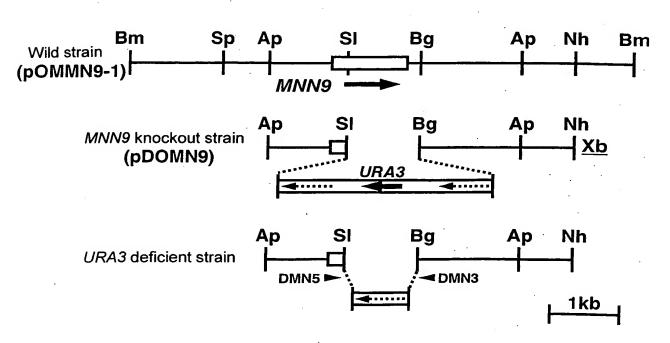


Fig. 18A

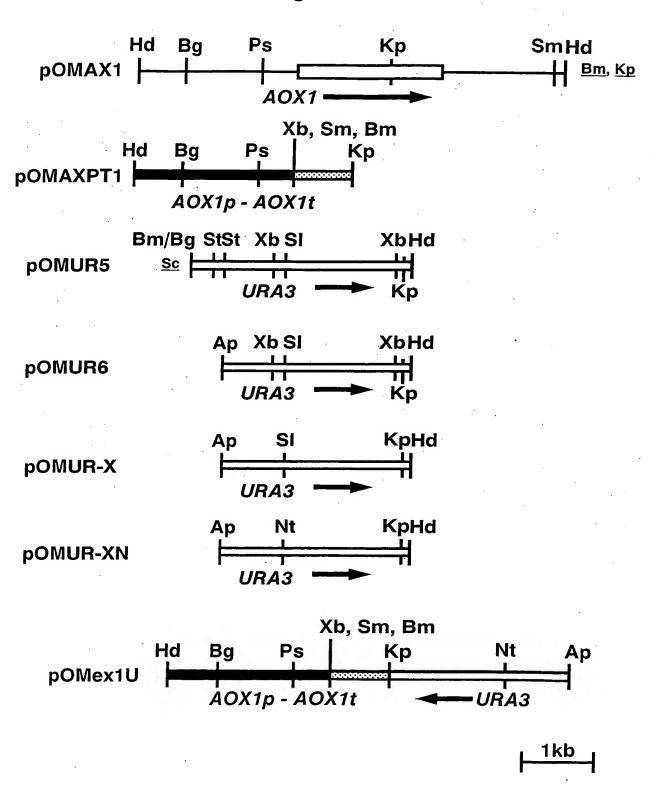
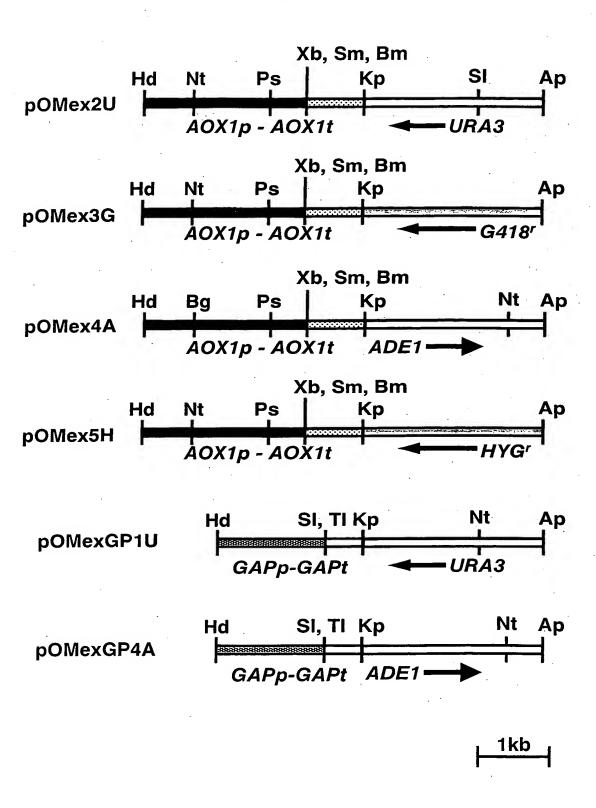
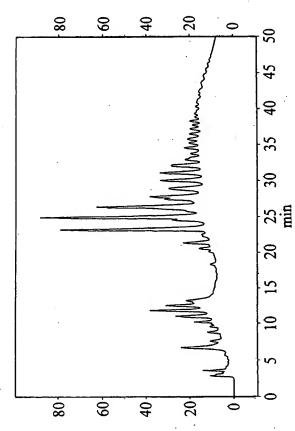


Fig. 18B



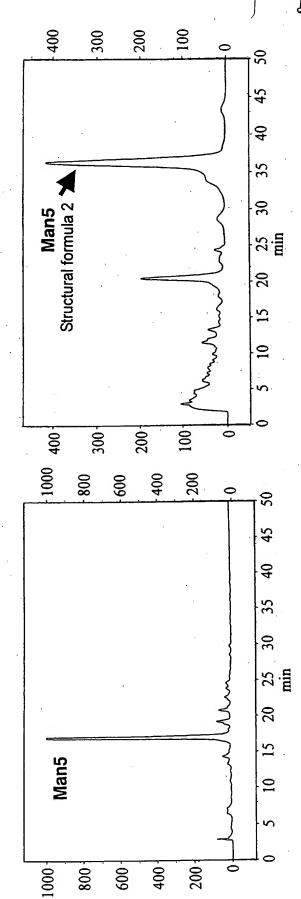
Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

Ogataea minuta ΤΚ3-Α(Δoch1) strain Amide column



1-1





14/1/26

Fig. 19

10/511436

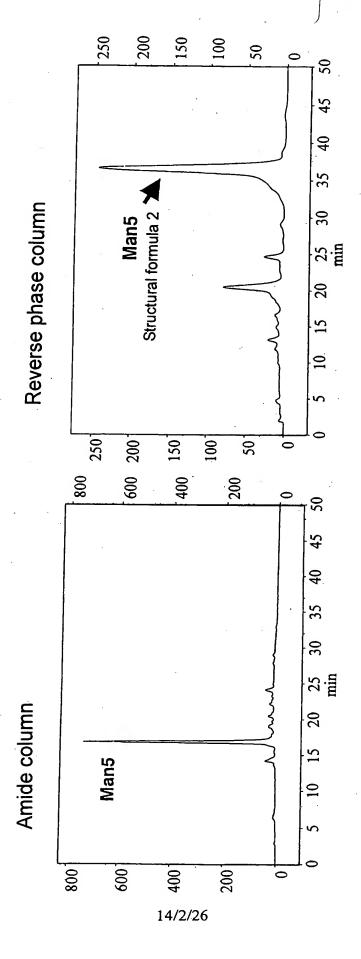


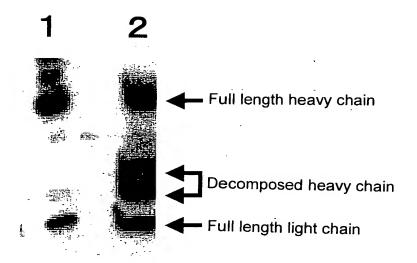
Fig. 20

Title: METHYLOTROPH PRODUCING MAMMALIAN
TYPE SUGAR CHAIN

Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

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Fig. 21

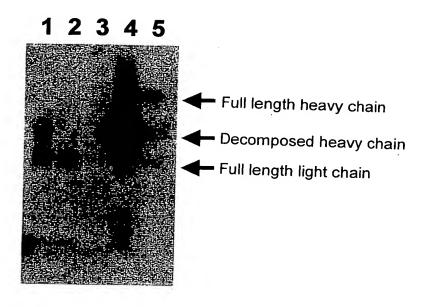


1: Control antibody

2: Antibody produced by Ogataea minuta TK9-IgB-aM strain

Title: METHYLOTROPH PRODUCING MAMMALIAN
TYPE SUGAR CHAIN
Inventor(s): Kazuo KOBAYASHI, et al.
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Fig. 22



- 1. Culture supernatant
- 2. Column non-adsorbed fraction
- 3. Wash fraction
- 4. Elution fraction
- 5. Control antibody

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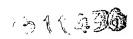
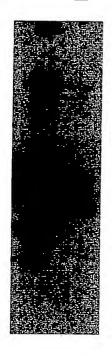
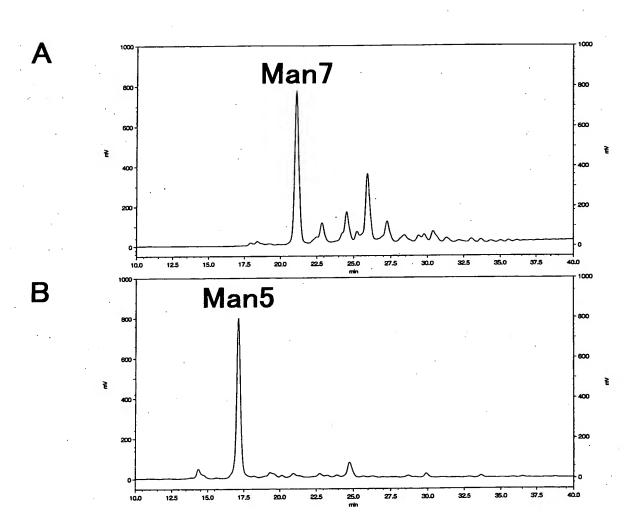


Fig. 23



- **1.** Control antibody
- 2. Antibody produced by Ogataea minuta TK9-IgB-aM strain

Fig. 24



A. Ogataea minuta TK9-IgB strain

B. Ogataea minuta TK9-IgB-aM strain

Fig. 25

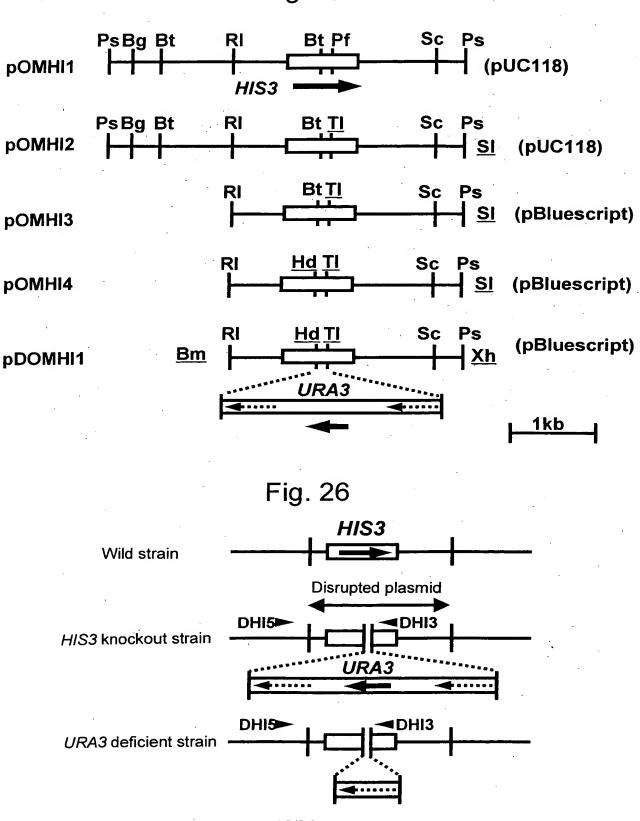
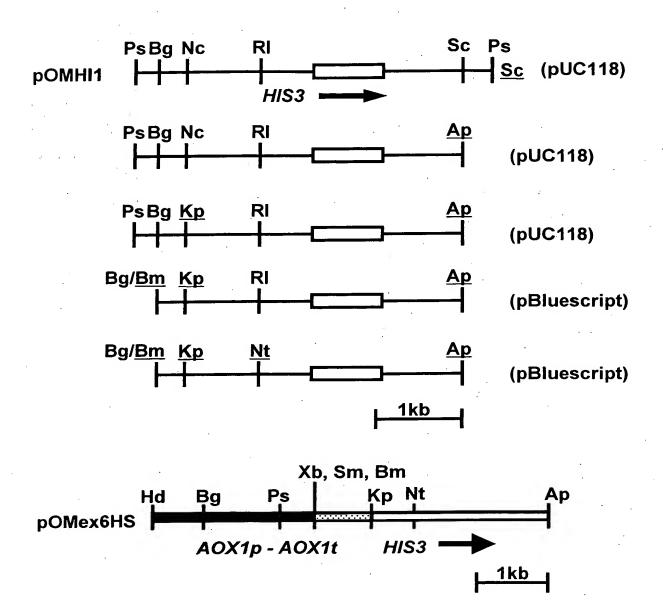


Fig. 27



10/511436

Fig. 28

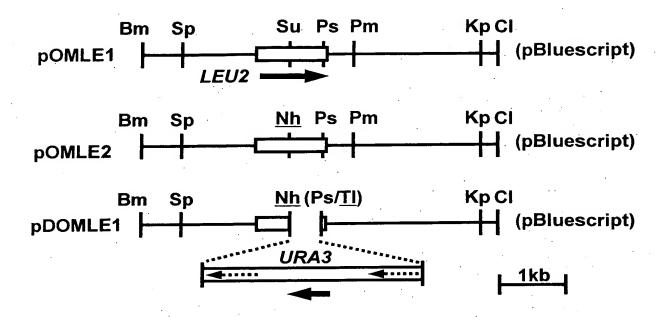


Fig. 29

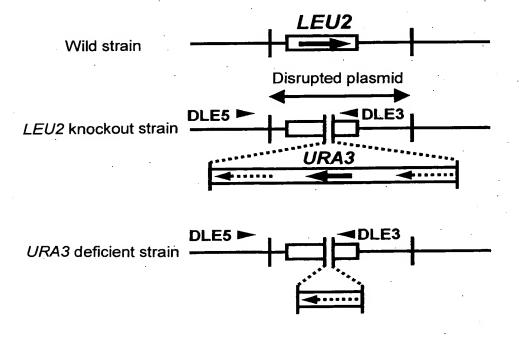


Fig. 30

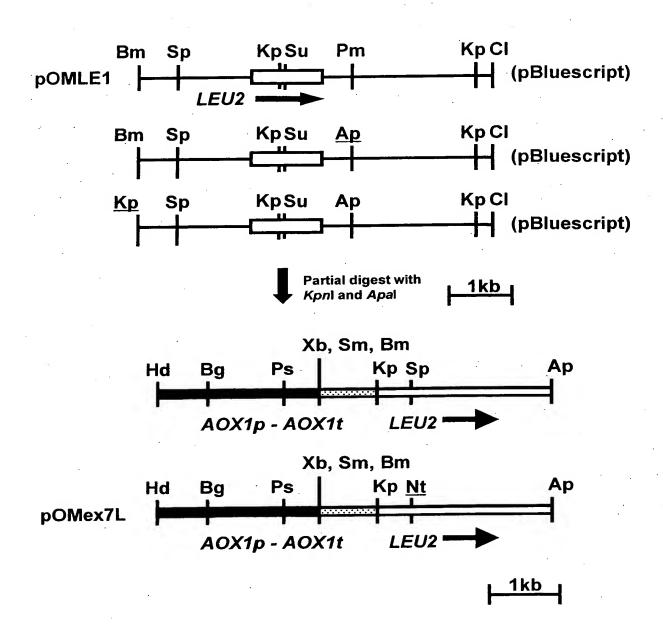
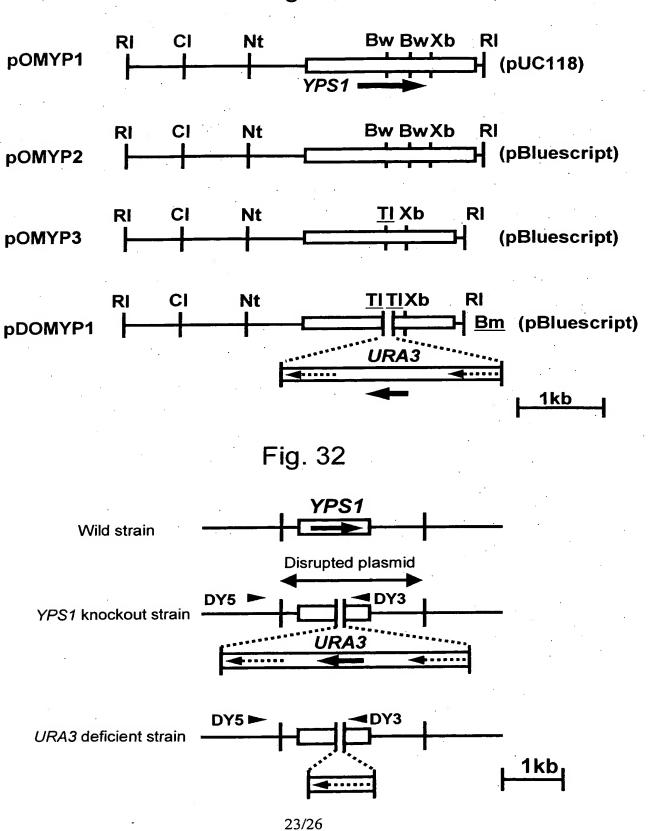
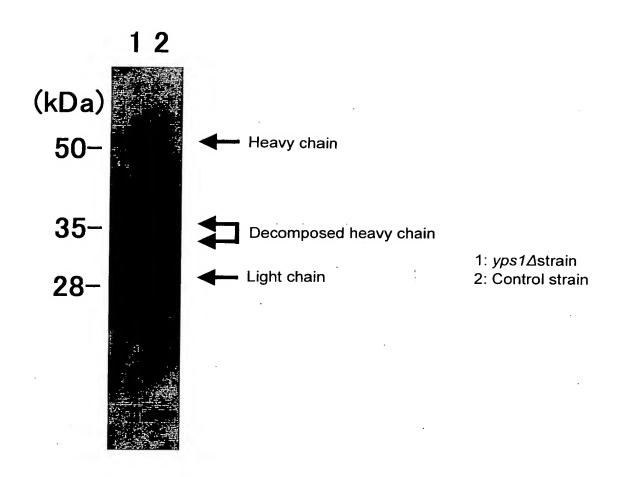


Fig. 31



Appl. No.: 10/511,436

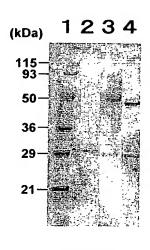
Fig. 33



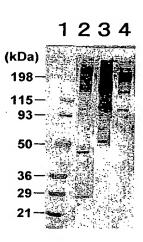
Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN

Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

Fig. 34







Unreduced

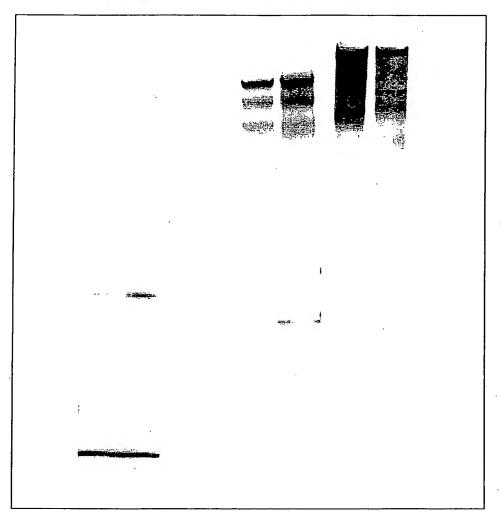
- 1 Molecular weight marker
- 2 Yeast culture supernatant
- 3 Protein A Elution fraction
- 4 Control antibody

Title: METHYLOTROPH PRODUCING MAMMALIAN TYPE SUGAR CHAIN Inventor(s): Kazuo KOBAYASHI, et al. Appl. No.: 10/511,436

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Fig. 35

12 34 56



Lanes 1, 3, 5;

Control strain (Ogataea minuta YK3-IgB1-aMstrain)

Lanes 2, 4, 6;

PDI-transferred strain (Ogataea minuta YK3-IgB1-aM-P strain)

Lanes 1, 2: Reduced (Culture supernatant)

Lanes 3, 4: Unreduced (Culture supernatant)

Lanes 5, 6: Unreduced (Cell extract)